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the lacuna, but has insufficient luminosity to be visible. I do not know any nebula in the sky which shows this more clearly.

I also give a somewhat enlarged reproduction of a picture of the nebula itself, taken with the 28-inch reflector (Plate 4, fig. 2). The photograph was taken April 18, 1907, with an exposure of 40 minutes. The scale on the reproduction is about 1 mm. to 21 seconds of arc.*

I may perhaps mention two peculiarities common to this nebula, to the π^2 Cygni nebula, and to perhaps all other similarly surrounded by lacunæ. First: the long channels are all nearly straight and clean in the vicinity of the nebula, and become curved and partly filled up with stars at a greater distance from it. Secondly: the channel is simple at the end nearest the nebula, and divided into two or three complicated arms at the end further removed.

* In the reproduction 1 mm. = about $30''.6$.

Heidelberg, Astrophysical Observatory:
1907 July 27.

Occultation of the Hyades. By Walter Heath, M.A.

In order to determine the longitude of my observatory I have recently compared twenty-three occultation observations made by me with the corresponding Greenwich observations, and I find a discordance in the case of the reappearance of two stars of the Hyades on 19th September 1905. I have therefore compared the results with some observations published in *A.N.*, 4088; the following are the particulars. The results in brackets are derived from observations at the bright limb.

1905 Sept. 18	Utrecht	ζ Tauri	$\cdot 95\Delta\alpha + \cdot 41\Delta\delta = (10\cdot 20)$
" "	"	"	$\cdot 99 ,, + \cdot 27 ,, = 8\cdot 44$
" "	Jena	"	$\cdot 95 ,, + \cdot 39 ,, = 8\cdot 26$
" 19	"	γ Tauri	$\cdot 42 ,, + \cdot 95 ,, = (5\cdot 78)$
" "	"	"	$\cdot 84 ,, - \cdot 57 ,, = 3\cdot 97$
" "	Greenwich	θ_1 Tauri	$\cdot 94 ,, + \cdot 37 ,, = 1\cdot 71$
" "	"	D.M. 15° , 633	$\cdot 94 ,, - \cdot 35 ,, = 1\cdot 36$
" "	Cobham	θ_1 Tauri	$\cdot 94 ,, + \cdot 38 ,, = 5\cdot 12$
" "	"	D.M. 15° , 633	$\cdot 95 ,, - \cdot 35 ,, = 6\cdot 22$

Note.—For Cobham the longitude assumed was $23'\cdot 6''$ W., latitude $51^\circ 19' 39''$, height above sea 180 feet. The sidereal times observed were $4^h 27^m 22^s\cdot 49$ and $4^h 45^m 2^s\cdot 02$ after correction.

Uplands, Cobham, Surrey:
1907 October 18.

Disappearance of Saturn's Ring System, 1907 October.

By R. T. A. Innes.

Thanks to the assistance of Sir David Gill and the Witwatersrand Council of Education (Mr. Th. Reunert, chairman), I have within the last few days erected a 9-in. refractor by Grubb.

The disappearance of Saturn's rings was watched with this instrument on the 3rd October 1907. An exact copy of the notes made reads as follows:

1907 Oct. 3, 6.45 p.m. twilight (4.45 p.m. G.M.T.). Saturn's ring distinctly seen by myself and several visitors. It was very faint and only seemed to be about half of its usual length. Definition medium, planet low.

8.45 p.m. (6.45 p.m. G.M.T.). The ring is invisible. The bright equatorial band was crossed by a sharp dark line which just lay to the N. of Saturn's equator. This dark line had been seen on preceding nights, but on this occasion it seemed to be sharper and darker. Two satellites, about 2" or 3" apart, followed Saturn.

9.30 p.m. (G.M.T. 7.30 p.m.). Ring distinctly seen, but like a ghost. Care taken to eliminate subjective effects. Definition very good.

10 p.m. (8.0 G.M.T.). Ring still glimpsed. Preceding part of ring modified by two beads, one twice as large as the other (Enceladus and Mimas). My son's description is "Ring visible on both sides, extending about three-quarters diameter of planet. Nearer and brighter satellite is half way along ring and touches the northern side. Fainter satellite precedes end of ring."—(E. A. I.)

11.45 p.m. (9.45 G.M.T.). Quite doubtful if ring really seen. Mimas and Enceladus very close together. My son, however, was quite certain that he held the ring steadily. His words are "Ring very faint, but ended off sharply. Fainter satellite is preceding."—(E. A. I.) Definition perfect.

12.30 p.m. (10.30 G.M.T.). No suspicion of ring; only one satellite seen prec. "Ring not seen with any certainty. The first of the satellites following Saturn getting too close."—(E. A. I.) Definition very good.

Thus at	3 Oct. 1907	4.45 G.M.T.	Ring quite easy.
		7.30 "	Ring difficult but distinct.
		8.0 "	Ring still seen.
		9.45 "	Ring still glimpsed.
		10.30 "	Ring invisible.

So that, as seen in a 9-in. refractor under circumstances of good definition, the ring system became invisible soon after 9.45 and before 10.30 G.M.T. As the ring was easy to see at 4.45, and got difficult as quickly, the Earth must have passed through its plane soon after invisibility.